AMERICAN MATHEMATICAL SOCIETY

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Notices

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Issue Number 14 December 1955

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CALENDAR OF MEETINGS

Note: This Calendar lists all of the meetings which have been approved by the Council up to the date at which this issue of the *Notices* was sent to press. The meeting dates which fall rather far in the future are subject to change. This is particularly true of the meetings to which no numbers have yet been assigned.

Meeting No.	Date	Place	Deadline for Abstracts
522	February 25, 1956	New York, New York	Jan. 12
	April 20–21, 1956	New York, New York	
	April 28, 1956	Monterey, California	
	August 20–25, 1956 (61st Summer Meeting)	Seattle, Washington	
	November 30–December 1, 1956	Evanston, Illinois	
	December 27–29, 1956 (63rd Annual Meeting)	Rochester, New York	
	November 28–29, 1958	Evanston, Illinois	

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SIXTY-SECOND ANNUAL MEETING

Houston, Texas

December 27-29, 1955

PROGRAM

The Sixty-second Annual Meeting of the American Mathematical Society will be held at The Rice Institute, Houston, Texas, Tuesday through Thursday, December 27-29, 1955, in conjunction with the Annual Meeting of the Mathematical Association of America on Friday, December 30.

The twenty-ninth Josiah Willard Gibbs Lecture, *The structure of simple fluids*, will be delivered by Professor J. E. Mayer of the University of Chicago on Tuesday at 8:00 P.M. in the auditorium of the Southwestern Home Office of The Prudential Insurance Company of America.

The Presidential Address will be delivered by Professor G. T. Whyburn of the University of Virginia. Professor Whyburn's topic is *Topological analysis*, and he will lecture on Wednesday at 10:30 A.M. in the Prudential Auditorium.

By invitation of the Committee to Select Hour Speakers for Annual and Summer Meetings, Professor S. S. Chern will address the Society on *Complex vector bundles*. Professor Chern's lecture is scheduled for Tuesday at 2:00 P.M. in the Prudential Auditorium.

The annual business meeting and election of officers will be held on Thursday at 10:30 A.M. in the Chemistry Lecture Hall.

There will be a banquet on Wednesday at 6:30 P.M. in The Rice Institute Commons.

The Council of the Society will meet in the Lecture Lounge of Fondren Library at 3:00 P.M. on Wednesday, and reconvene after the banquet if necessary.

The Employment Register will be maintained in Room 109, Anderson Hall.

REGISTRATION, ROOMS, AND MEALS

Registration headquarters will be in the Fondren Library of The Rice

Institute and will be open daily from 8:30 A.M. to 5:00 P.M. All those attending the meetings are requested to register at the headquarters as soon as possible. A directory of all persons registered and an information desk will be maintained.

There will be a limited amount of space in Wiess Hall - the rooms are all double and two rooms share one bath. These rooms will be available from Monday noon to Saturday noon. The charge will be $2.50/person night, with a minimum of $10/person. Keys *will* be available at Wiess Hall after the registration desk is shut.

A partial list of hotels and motels available in Houston follows. (All rooms have private baths.)

	Single	Double
Shamrock Hilton Hotel Main at Holcombe	$6.00-18.00	$8.00-20.00
Warwick Hotel 5701 Main Street	6.00-7.00	9.00
Hotel Plaza 5020 Montrose Blvd.	5.00-8.00	7.00-10.00
Lamar Hotel Main at Lamar	5.50-9.00	7.50-10.00
Rice Hotel Main at Texas	5.00-9.50	7.00-11.50
Ben Milam Hotel Texas and Crawford	3.75-8.00	5.00-10.00
Nomad Motor Hotel 10,000 South Main	6.00-10.00	8.50-12.00
Western Skies Motel 2806 Old Spanish Trail	6.00-10.00	8.00-12.00

The Warwick is about one-half mile from the campus, the Shamrock and Plaza are about 1 mile from the campus. The Warwick and the Shamrock are on both the South Main and Bellaire bus lines which run past the campus. The Plaza is on the University bus line which also runs past the campus. All three of these bus lines connect the campus with the center of town. The taxi fare from the center of town to the campus is roughly $1.25.

Those desiring hotel accommodations should make arrangements directly with the hotel, identifying themselves as members of the Society.

All those attending the meeting may obtain cafeteria-style meals in the Rice Commons at the following rates: Breakfast, $.75, Lunch, $1.25, and Dinner, $1.50. These meals are optional, and no package deal is involved.

The Committee on Arrangements requests that the reservation form on page 41 be filled out and mailed to Dr. L. K. Durst so as to reach Houston by December 15.

ENTERTAINMENT AND RECREATION

The lounges in the basement of Fondren Library and in the Cohen House (Faculty Club) will be open daily for the benefit of those prone to meeting-feet. Various classrooms in Anderson Hall will be available for those desirous of haranguing their colleagues with the aid of a blackboard.

Tea will be served every afternoon in the lounge of the Cohen House.

A banquet will be held on Wednesday at 6:30 P.M. in The Rice Institute Commons. The price will be $3.50.

On Thursday afternoon there will be a trip to the Baytown Refinery of the Humble Oil and Refining Company. Buses will leave the campus at 1:30 P.M. and return by 6:00 P.M. The charge (transportation) will be $1.25, with tickets available at the registration desk. Please indicate on the reservation form whether you plan to make this trip.

On Thursday evening there will be a concert by the Lyric Art String Quartet in the Lecture Lounge of the Fondren Library. To defray the cost of engaging this quartet (which has maintained a successful series of concerts in Houston for several years), tickets will be sold at $1.00.

TRANSPORTATION

Houston is served by the following airlines: Braniff, Delta C. and S., Eastern, American-Continental, Pan-American, and TWA. Each has a "family plan". There are non-stop flights available from New York, Chicago, Washington, D.C. and Atlanta.

Houston is served by the following railroads: Missouri Pacific, Santa Fe, Southern Pacific, MKT, and Burlington-Rock Island. All offer the usual "family plan" arrangements for weekday travel.

Limousines from the airport stop at the Shamrock Hilton and the Rice Hotels. If there are passengers for the Shamrock, then the limousine passes the Warwick and will stop there *upon request.* The fare is $1.15/person. Cab fare from the airport is about $2.30/cab.

The principal highways through Houston are U.S. 59, U.S. 75, and

U.S. 90. There will be ample parking space available on the campus.

MAIL AND TELEGRAMS

Mail and telegrams for those attending the meeting should be addressed in care of Mathematical Association and Society Meeting, The Rice Institute, Houston 1, Texas.

Reservation forms (see page 41) should be mailed to Dr. L. K. Durst, Department of Mathematics, The Rice Institute, Houston 1, Texas, *in time to reach Houston* by December 15.

Committee on Arrangements

F. E. Ulrich, *Chairman*

H. E. Bray	G. T. Johnson
H. A. Brown	G. R. MacLane
L. K. Durst	S. Mandelbrojt
H. M. Gehman	J. W. T. Youngs

TIME TABLE

(Central Standard Time)

TUESDAY, DECEMBER 27

8:30 A.M.–5:00 P.M. Registration, Fondren Library

9:00 A.M.–12:00 M. Employment Register, 109 Anderson Hall

10:30 A.M. Sessions for contributed papers
Analysis, Chemistry Lecture Hall
Algebra, 108 Anderson Hall

1:00 P.M.–5:00 P.M. Employment Register, 109 Anderson Hall

2:00 P.M. Invited address: S. S. Chern, Prudential Auditorium

4:00 P.M. Sessions for contributed papers
Applied Mathematics, Chemistry Lecture Hall
Analysis, 108 Anderson Hall
Topology, 110 Anderson Hall

8:00 P.M. Josiah Willard Gibbs Lecture: J. E. Mayer, Prudential Auditorium

WEDNESDAY, DECEMBER 28

8:30 A.M.–5:00 P.M. Registration, Fondren Library

9:00 A.M.–12:00 M. Employment Register, 109 Anderson Hall

9:00 A.M. Sessions for contributed papers
Analysis, Chemistry Lecture Hall
Geometry, 108 Anderson Hall

10:30 A.M. Presidential Address: G. T. Whyburn, Prudential Auditorium

1:00 P.M.–5:00 P.M. Employment Register, 109 Anderson Hall

2:00 P.M. Sessions for contributed papers
Analysis, Chemistry Lecture Hall
Topology, 108 Anderson Hall
Applied Mathematics and Probability, 110 Anderson Hall

3:00 P.M. Council, Lecture Lounge, Fondren Library

6:30 P.M. Banquet, Rice Institute Commons

THURSDAY, DECEMBER 29

8:30 A.M.–5:00 P.M. Registration, Fondren Library

9:00 A.M.–12:00 M. Employment Register, 109 Anderson Hall

9:00 A.M. Sessions for contributed papers
Analysis, Chemistry Lecture Hall
Geometry, 108 Anderson Hall
Algebra and Logic, 110 Anderson Hall

10:30 A.M. Business Meeting, Chemistry Lecture Hall

11:30 A.M. Board of Trustees, 231 Fondren Library

1:00 P.M.–5:00 P.M. Employment Register, 109 Anderson Hall

1:30 P.M.–6:30 P.M. Trip to Baytown Refinery

7:30 P.M. MAA Board of Governors, Cohen House

FRIDAY, DECEMBER 30

8:30 A.M.–5:00 P.M. Registration, Fondren Library

9:00 A.M.–12:00 M. Employment Register, 109 Anderson Hall

9:00 A.M. MAA Session, Physics Amphitheatre
Addresses by Guillermo Torres, W. W. Boone, and H. R. J. Grosch

1:00 P.M.–5:00 P.M. Employment Register, 109 Anderson Hall

2:00 P.M. MAA Session, Physics Amphitheatre
Business Meeting; Addresses by L. W. Cohen, R. H. Bing, and H. J. Ettlinger

PROGRAM OF THE SESSIONS

(Time limit for each contributed paper, 10 minutes)

TUESDAY, 10:30 A.M.

Session on Analysis, Chemistry Lecture Hall

(1) On Erhard Schmidt branching theory
Mr. Leon Brown, Tulane University

(2) Congruence of self-adjoint operators
Professor Arlen Brown, Rice Institute

(3) L^1-spaces on groups. III
Dr. H. J. Reiter, The University, Reading, England

(4) Extremal elements of a convex cone of subadditive functions
Professor E. K. McLachlan, Baylor University

(5) Lower bounds for eigenvalues of elastically supported membranes
Professor L. E. Payne and Professor H. F. Weinberger, University of Maryland

(6) On non-linear repulsive forces
Mr. R. W. Bass, Princeton University

Session on Algebra, 108 Anderson Hall

(7) The diagonalization of skew-hermitian matrices
Dr. Mark Lotkin, Republic Aviation Corporation

(8) The defect of completely primary algebras. Preliminary report
Dr. G. P. Weeg, Engineering Research Associates, and Professor Bernard Vinograde, Iowa State College

(9) Indefinite ternary quadratic forms
Professor B. W. Jones, University of Colorado, and Dr. G. L. Watson, University of London

(10) On differentiations in commutative rings of squarefree non-zero characteristic
Professor Arno Jaeger, University of Cincinnati

(11) The linear homogeneous group. III. Preliminary report
Professor J. L. Brenner, State College of Washington

(12) Periodic sets of ordinals
Professor A. H. Copeland, Sr. and Professor Frank Haray, University of Michigan

TUESDAY, 2:00 P.M.

General Session, Prudential Auditorium

Complex vector bundles (One hour)
Professor S. S. Chern, University of Chicago

TUESDAY, 4:00 P.M.

Session on Applied Mathematics, Chemistry Lecture Hall

(13) On the numerical solution of heat conduction problems in two and three space variables
Dr. H. H. Rachford, Jr. and Dr. Jim Douglas, Jr., Humble Oil and Refining Company, Houston, Texas

(14) Certain classes of finite sequential machines with distinguished states
Professor A. H. Diamond, Stevens Institute of Technology

(15) The collision integral for Maxwellian molecules; elementary spherical moments
Professor Ernest Ikenberry, Alabama Polytechnic Institute

(16) Programming games
Dr. J. R. Isbell, Ballistic Research Laboratories, Aberdeen Proving Ground, Maryland, and Dr. W. H. Marlow, George Washington University

(17) A method for solving mixed initial problems for quasi-linear hyperbolic systems
Professor G. L. Spencer II, University of Maryland

(18) On the Hankel transform. II
Dr. T. P. Higgins, Boeing Airplane Company, Seattle, Washington, and Professor W. T. Guy, Jr., University of Texas

Session on Analysis, 108 Anderson Hall

(19) Functions which have harmonic support
Mr. Guy Johnson, Jr., Rice Institute

(20) Meromorphic functions with specified asymptotic behavior
Professor G. R. Mac Lane, Rice Institute

(21) Generalized Laplacians and harmonic and subharmonic functions
Professor E. F. Beckenbach, University of California, Los Angeles, and Professor M. O. Reade, University of Michigan

(22) Partially bounded continued fractions
Professor H. S. Wall, University of Texas

(23) Summability factors for Cesàro's method
Dr. Alexander Peyerimhoff, University of Cincinnati

(24) A note on harmonic functions
Mr. E. P. Merkes, Dugway Proving Ground, Dugway, Utah

Session on Topology, 110 Anderson Hall

(25) A connected point set in the plane which spirals down on each of its points
Dr. B. J. Pearson, Illinois Institute of Technology

(26) Atomic decompositions of continua
Professor R. D. Anderson, University of Pennsylvania and Institute for Advanced Study

(27) An alternate proof that 3-manifolds can be triangulated
Professor R. H. Bing, University of Wisconsin

(28) On a question raised by R. H. Bing
Dr. Lida K. Barrett, University of Connecticut

(29) Concerning dimension raising mappings of cells
Dr. R. F. Williams, University of Wisconsin

(30) Convergent sequences and mosaics
Mr. W. F. Davison, University of Virginia

TUESDAY, 8:00 P.M.

Josiah Willard Gibbs Lecture, Prudential Auditorium

The structure of simple fluids (One hour)
Professor J. E. Mayer, University of Chicago

WEDNESDAY, 9:00 A.M.

Session on Analysis, Chemistry Lecture Hall

(31) Fourier transforms of generalized functions
Professor Jacob Korevaar, University of Wisconsin

(32) Minimizing integrals in certain classes of monotone functions
Professor H. D. Brunk and Professor G. M. Ewing, University of Missouri, and Professor W. R. Utz, Jr., University of Missouri and Institute for Advanced Study

(33) On an inequality for convex functions
Professor H. D. Brunk, University of Missouri

(34) Fourier transforms and functions holomorphic in a half-plane
Professor Szolem Mandelbrojt, Rice Institute

(35) The construction of smoothed contours of a Frechet surface
Professor R. E. Fullerton, University of Maryland

(36) Interval-additive propositions
Professor L. R. Ford, Illinois Institute of Technology

Session on Geometry, 108 Anderson Hall

(37) Metric operations and Brouwerian geometries. Preliminary report
Professor L. M. Kelly and Mr. Leo Lapidus, Michigan State University

(38) On four real mutually orthogonal spheres
Professor N. A. Court, University of Oklahoma

(39) A geometric problem of S. Stein
Professor M. K. Fort, Jr., University of Georgia

(40) Remarks on the fundamental theorem concerning metric arcs with zero curvature at each point
Professor L. M. Blumenthal, University of Missouri

(41) On the partition of the vertices of an n-cube by an $(n-1)$-plane
Professor S. S. Cairns, University of Illinois

WEDNESDAY, 10:30 A.M.

Presidential Address, Prudential Auditorium

Topological analysis (One hour)
Professor G. T. Whyburn, University of Virginia

WEDNESDAY, 2:00 P.M.

Session on Analysis, Chemistry Lecture Hall

(42) Region of convergence of Dirichlet series with complex exponents
Dr. T. M. Gallie, Jr., Humble Oil and Refining Company, Houston, Texas

(43) Bounded solutions of Riccati systems. Preliminary report
Professor L. W. Green, University of Minnesota

(44) The Dirichlet problem for linear elliptic partial differential equations
Dr. Shmuel Agmon, Hebrew University and New York University

(45) Signs of the coefficients of real entire functions, bounded on the positive axis
Professor Albert Edrei, Syracuse University

(46) Euler polynomials and numbers of the second kind
Dr. G. O. Peters, Aircraft Armaments, Incorporated, Cockeysville, Maryland

(47) Variations of a method for evaluating the zeros of analytic functions
Professor Stephan Kulik, University of South Carolina

Session on Topology, 108 Anderson Hall

(48) Structs on the 1-sphere
Dr. I. S. Krule, University of Minnesota

(49) On o-ideals in $C(X)$
Mr. J. G. Horne, Jr., Tulane University

(50) On semigroups on a manifold
Professor P. S. Mostert and Professor A. L. Shields, Tulane University

(51) The existence of certain types of manifolds
Professor M. L. Curtis, Northwestern University, and Professor R. L. Wilder, University of Michigan

(52) A spectral sequence associated with a topological space
Professor M. L. Curtis, Northwestern University

(53) The Whitehead bracket product on CW-complexes
Dr. A. H. Copeland, Jr., Purdue University

(54) Transfinite sequential order topology
Dr. R. W. Bagley, Convair, Fort Worth, Texas

Session on Applied Mathematics and Probability, 110 Anderson Hall

(55) Stress theory of plastic flow
Professor Deonisie Trifan, University of Arizona

(56) A new technique for eigenvalue problems
Mr. H. A. Osborn, University of California, Berkeley

(57) A modified iteration procedure
Professor L. A. Colquitt, Texas Christian University

(58) On the zeros of the sample functions of certain Gaussian processes
Dr. G. E. Baxter and Professor M. D. Donsker, University of Minnesota

(59) Convergence of nondenumerable martingales. Preliminary report
Dr. Klaus Krickeberg, University of Illinois
(Introduced by Professor J. L. Doob)

THURSDAY, 9:00 A.M.

Session on Analysis, Chemistry Lecture Hall

(60) The Cauchy problem for linear partial differential equations with restricted boundary conditions. III
Professor E. P. Miles, Jr. and Professor Ernest Williams, Alabama Polytechnic Institute

(61) Differential systems with interface and general boundary conditions
Professor T. J. Pignani, Loyola University, and Professor W. M. Whyburn, University of North Carolina

(62) Nonlinear Volterra functional equations and linear parabolic differential systems
Professor R. H. Cameron, University of Minnesota

(63) Oscillation criteria for linear differential systems with complex coefficients
Professor W. T. Reid, Northwestern University

(64) A unique continuation theorem for elliptic partial differential equations and inequalities of second order
Professor Nachman Aronszajn, University of Kansas

(65) A necessary condition for non-oscillation of a system of second order differential equations. Preliminary report
Professor J. H. Barrett, University of Delaware and Yale University

Session on Geometry, 108 Anderson Hall

(66) Affine geometry III. On affine axiomatic theory of area and volume
Dr. Saly R. Struik, Belmont, Massachusetts

(67) Union parallel displacement
Professor C. E. Springer, University of Oklahoma

(68) Indicatric torsion in a subspace of a Riemannian space
Professor T. K. Pan, University of Oklahoma

(69) Trammel rotors in regular polygons
Mr. Michael Goldberg, Bureau of Ordnance, U. S. Navy

(70) Some generalizations of theorems about quadric surfaces
Professor R. S. Underwood, Texas Technological College

Session on Algebra and Logic, 110 Anderson Hall

(71) Shrinkable algebras of level two
Professor R. H. Oehmke, Butler University

(72) Characterizations of uniserial and generalized uniserial algebras in terms of Frobenius type algebras
Professor D. W. Wall, University of North Carolina

(73) A single rational approximation to a complex number
Professor Ivan Niven, University of Oregon and University of California, Berkeley

(74) Universal completeness for relational systems
Professor Hugo Ribeiro, University of Nebraska

(75) A primitive recursive foundation for randomness. Preliminary report
Professor H. D. Sprinkle, University of Arizona

THURSDAY, 10:30 A.M.

Annual Business Meeting, Chemistry Lecture Hall

SUPPLEMENTARY PROGRAM
(To be presented by title)

(76) Plane continua no two non-degenerate subcontinua of which are homeomorphic
Professor R. D. Anderson, University of Pennsylvania and Institute for Advanced Study, and Professor Gustave Choquet, University of Paris and Institute for Advanced Study

(77) A formulation of quantum mechanics based on the quasi-probability distribution induced on phase space
Mr. G. A. Baker, Jr., University of California, Berkeley
(Introduced by Professor H. A. Arnold)

(78) A note on the physical principles underlying the quasi-probability distribution for quantum mechanics
Mr. G. A. Baker, Jr., University of California, Berkeley
(Introduced by Professor H. A. Arnold)

(79) The relation of the quasi-probability distributional representation of quantum mechanics to classical mechanics and certain allied results
(Introduced by Professor H. A. Arnold)

(80) On the regular solutions at a point of singularity of a system of non-linear differential equations
Mr. R. W. Bass, Princeton University

(81) A generalization of the functional relation $Y(t+s) = Y(t)Y(s)$ to piecewise-linear difference-differential equations
Mr. R. W. Bass, Princeton University

(82) Improved on-off missile stabilization
Mr. R. W. Bass, Princeton University

(83) Extensions of Jentzsch's theorem. Preliminary report
Professor Garrett Birkhoff, Harvard University

(84) Some free groups of matrices
Professor J. L. Brenner, State College of Washington

(85) Balance scale sorting
Professor S. S. Cairns, University of Illinois

(86) Semi-reflexive spaces
Professor Paul Civin and Professor Bertram Yood, University of Oregon

(87) Forests and determinants
Dr. R. H. Crowell, Princeton University

(88) On bound algebras
Professor W. E. Deskins, Ohio State University

(89) Open mappings and regular convergence
Professor Eldon Dyer, Johns Hopkins University

(90) On the modular characters of finite groups
Pvt. Walter Feit, Aberdeen Proving Ground, Maryland

(91) AW^* embedded AW^* algebras are weakly closed
Dr. Jacob Feldman, Institute for Advanced Study

(92) Concerning lattice homomorphisms
Professor Casper Goffman, University of Oklahoma

(93) The stability of superposed fluids
Dr. H. H. Goldstine, Institute for Advanced Study, and Dr. Joseph Gillis, Weizmann Institute of Science and Institute for Advanced Study

(94) Weighted p-norms and Fourier transforms. Preliminary report
Mr. D. L. Guy, Washington University

(95) Geodesic mapping of minimal surfaces
Dr. H. G. Helfenstein and Dr. Max Wyman, University of Alberta

(96) Normal matrices
Professor Tosio Kato, American University and University of Tokyo, and Dr. Olga Taussky, National Bureau of Standards, Washington, D. C.

(97) On complexes in a group
Professor J. H. B. Kemperman, Purdue University

(98) Consistency of the maximum likelihood estimator in the presence of infinitely many incidental parameters
Professor J. C. Kiefer and Professor Jacob Wolfowitz, Cornell University

(99) On the order of the automorphism group of a finite group. II
Dr. Walter Ledermann and Dr. B. H. Neumann, University of Manchester, Manchester, England

(100) Composition theorem on Fourier transforms
Professor Szolem Mandelbrojt, Rice Institute

(101) Double transitivity in finite projective planes
Professor T. G. Ostrom, Montana State University

(102) On a lemma of Kneser
Dr. C. D. Papakyriakopoulos, Institute for Advanced Study

(103) A Stieltjes type of inversion
Professor Pasquale Porcelli, Illinois Institute of Technology

(104) The Fourier coefficients of the invariants $j(2\ 1/2;\tau)$ and $j(3\ 1/2;\tau)$
Mr. John Raleigh, University of Pennsylvania

(105) Osculatory extrapolation and a new method for the numerical integration of differential equations
Dr. H. E. Salzer, Diamond Ordnance Fuze Laboratories, Washington, D. C.

(106) The equivalence of two continuity properties of measurable functions. Preliminary report
Professor H. M. Schaerf, Washington University

(107) Convergence of moments of sums of truncated random variables
Dr. J. M. Shapiro, Ohio State University

(108) The symmetric derivative on the $(k-1)$-dimensional hypersphere
Professor V. L. Shapiro, Rutgers University

(109) On the solution of a game-theoretic problem
Professor G. L. Thompson, Dartmouth College

(110) Algebraic results obtained by use of extended analytic geometry
Professor R. S. Underwood, Texas Technological College

J. W. T. Youngs
Associate Secretary

Bloomington, Indiana
November 14, 1955

NEWS ITEMS AND ANNOUNCEMENTS

GRANTS IN AID OF THE INSTITUTE FOR ADVANCED STUDY. The School of Mathematics of the Institute for Advanced Study will allocate a small number of grants-in-aid to gifted young mathematicians and mathematical physicists to enable them to study and to do research work at Princeton during the academic year 1956–1957. Candidates must have given evidence of ability in research comparable at least with that expected for the degree of Doctor of Philosophy. Blanks for application may be obtained from the School of Mathematics, Institute for Advanced Study, Princeton, New Jersey, and are returnable by January 1, 1956.

C. L. E. MOORE INSTRUCTORSHIPS IN MATHEMATICS FOR 1956–1957. The Department of Mathematics at the Massachusetts Institute of Technology wishes to announce the availability of C. L. E. Moore Instructorships in Mathematics for 1956–1957 open to young mathematicians with doctorates who show definite promise in research. Applications should be filed not later than January 24, 1956 on forms obtained from the Department.

SENIOR POSTDOCTORAL FELLOWSHIPS OF THE NATIONAL SCIENCE FOUNDATION. The National Science Foundation will extend its fellowship awards program during 1956 to include approximately 40 senior postdoctoral Fellows in life and physical sciences and closely allied fields. Under the broadened program, fellowships will be awarded in mathematical, physical, medical, biological, engineering and other sciences, including anthropology, psychology (other than clinical), geography and certain interdisciplinary fields.

To be eligible for the new awards, candidates must be citizens of the United States with demonstrated ability and special aptitude for advanced training and productive scholarship in the sciences. In addition, candidates must have at least five years' experience beyond the science doctorate or its equivalent.

Fellows will be selected on the basis of ability as evidenced by letters of recommendation, academic records and other evidence of attainment. Candidates' qualifications will be evaluated by carefully chosen panels of scientists. Final selection of Fellows will be made by the National Science Foundation. Successful competitors will be announced in March, 1956. Stipends from $4,000 to $10,000, adjusted to match as closely as feasible the regular salaries of the award recipients, may be applied toward study or research in an accredited nonprofit institution of higher learning in the United States or abroad.

Applications may be obtained from the Division of Scientific Personnel and Education, National Science Foundation, Washington 25, D. C. Completed material must be received not later than January 16, 1956.

RESEARCH ASSOCIATESHIPS IN MATHEMATICS OF THE OFFICE OF NAVAL RESEARCH. Under contracts with the Office of Naval Research, post doctoral associateships in mathematics have been established at the following institutions, which invite applications in the indicated fields:

BROWN UNIVERSITY:	Lattices; Algebraic Topology; Riemann Surfaces, Measure and Area, Functional Analysis
CORNELL UNIVERSITY:	Algebraic Topology; Logic; Classical Analysis
UNIVERSITY OF MICHIGAN:	Lattices, Groups, Representations; Point Set, Algebraic, and Combinatorial Topology, Topology of Manifolds; Complex Variables, Linear Spaces
TULANE UNIVERSITY:	Topological Algebra
UNIVERSITY OF WASHINGTON: ...	Differential Geometry in the Large, Topological Differential Geometry; Functional and Harmonic Analysis
UNIVERSITY OF WISCONSIN:	Algebras, Rings, Projective Planes; Point Set Topology, Area and Length, Convex Sets; Classical Analysis, Distributions

For the initial year of this program, there will be available one such position at each of the above institutions. The contracts provide a salary of $5,000 for the academic year and an allowance for incidental expenses, including travel.

Appointments will be made on a competitive basis. Sole consideration will be given to the merits of the proposed research and the ability of the applicant as supported by letters of recommendation. Applications will be screened by the Office of Naval Research on the basis of

an evaluation by the National Research Council Committee on Mathematics, Advisory to the Office of Naval Research, consisting of: S. S. Cairns, Chairman, L. V. Ahlfors, A. A. Albert, M. H. Heins, S. Kakutani, D. Montgomery, I. Niven, B. J. Pettis, and J. B. Rosser.

Applications for the year 1956–57 must be submitted by 31 January 1956. Applicants will receive notification of the final decision on or before 15 March 1956.

Application forms and further information may be obtained from Dr. Arthur Grad, Mathematics Branch, Office of Naval Research, Washington 25, D. C.

SHELL MERIT FELLOWSHIPS FOR HIGH SCHOOL SCIENCE AND MATHEMATICS TEACHERS. The Shell Companies Foundation, Inc., has announced a broad program of recognition fellowships for high school teachers of science and mathematics.

Through the program, worked out with the cooperation of leading educational associations, Shell will underwrite summer seminars at Stanford and Cornell Universities for sixty teachers yearly. The Fellowship recipients, chosen on the basis of merit and demonstrated leadership qualities, will receive travel allowances, all tuition and fees, living expenses on the university campus and $500 in cash to make up for the loss of potential summer earnings. The fellowships were particularly designed for able experienced teachers who ordinarily might seek remunerative summer employment outside the school system. The intensive seminar programs will include graduate-level classes, lectures by outstanding scientists, and visits to modern industrial installations and research laboratories.

Mathematics, physics, or chemistry teachers with five years' experience and known leadership ability will be eligible for the Fellowships. Thirty teachers from west of the Mississippi River will attend the eight-week Stanford program which will be administered by the Stanford School of Education. Thirty from east of the Mississippi will be invited to a similar six-weeks' series of courses at Cornell.

In addition to teachers, present heads of departments or supervisors with good backgrounds in mathematics, chemistry or physics who were previously teachers are also eligible. Full responsibility for the final selection of the sixty will rest with Stanford University and Cornell University.

Requests for Fellowship applications should be sent to Cornell University and Stanford University. The completed form of each applicant must be accompanied by personal recommendations from his high school

principal, a faculty member from his most recent college, and someone who can attest to the applicant's leadership talents with young people outside school or with his professional associates.

The Fellowships are in addition to the Shell Companies Foundation's present $350,000 aid-to-education program which includes fifty graduate fellowships and twenty grants in fundamental research in science and engineering at forty-one colleges and universities.

A JOINT MEETING OF THE OPERATIONS RESEARCH SOCIETY OF AMERICA AND THE SOUTHERN CALIFORNIA CHAPTER OF THE INSTITUTE OF MANAGEMENT SCIENCES. Information has been received to the effect that these two organizations have decided to sponsor a joint Spring meeting. The University of California at Los Angeles will participate, and the meeting will be held at the Westwood Campus of U. C. L. A. on Friday and Saturday, March 30 and 31, 1956. The tentative plan of the meeting is to have one session devoted to a general topic (possibly the Theory of Waiting Lines), one panel session devoted to the topic of education, and two sessions on contributed papers.

It is expected that a preliminary announcement of the meeting will be distributed sometime in November. Inquiries regarding the meeting should be sent to Dr. Paul Stillson who is in charge of arrangements. Suggestions for the program are invited, and should be sent, along with proposed contributions to the program, to Dr. Andrew Vazsonyi, Program Chairman. The address of each of these men is the Ramo-Wooldridge Corporation, 8820 Bellanca Avenue, Los Angeles 45, California.

COMMISSION ON EXCHANGE OF MATHEMATICIANS OF THE INTERNATIONAL MATHEMATICAL UNION. Professor Harold Davenport has transmitted the following information:

"The Commission has organized, with the help of the Oe. M. G., an information service concerning (i) mathematicians normally resident outside Europe who are planning to visit one or more European countries, (ii) European mathematicians planning to travel in Europe but outside their own country. *In both cases, individual mathematicians are invited to communicate their plans to Professor W. Wunderlich, Technical University, Karlsplatz 13, Vienna, Austria.* They should give any addresses at which they may be reached (with dates if known), and any wishes they may have as to meeting mathematicians with particular interests, or in particular countries. It may be helpful if they indicate which language they speak. The information itself may be in English, French or German.

The information so received will be reproduced by the office of I. M. N.

and will be circulated from time to time. *It is at the disposal of any individual or institution interested, and any such individual or institution should ask to be placed on the mailing list.* A postcard addressed to Professor Wunderlich will suffice for this purpose.

The Commission cannot itself undertake the responsibility of arranging visits or exchanges, nor has it any funds available for that purpose. The members of the Commission are prepared to advise mathematicians who are proposing to visit their respective countries. They are also willing to advise young mathematicians of the opportunities for advanced study and research in their respective countries. The members are:

Professor E. G. Begle, Department of Mathematics
Yale University, New Haven, Conn., U. S. A.

Professor M. Brelot, Institut Henri Poincare,
11 Rue Pierre-Curie, Paris 5, France

Professor H. Davenport (Chairman), University College,
London, W. C. 1, England

Professor B. Eckmann, Technische Hochschule,
Zürich, Switzerland

Professor S. Iyanaga, University of Tokyo,
Tokyo, Japan

*Professor A. Pleijel, Mathematical Institute,
University of Lund, Lund, Sweden

Professor B. Segre, Instituto Matematico, Citta
Universitaria, Rome, Italy

Professor W. Süss, Mathematisches Institut der
Universitat, Freiburg i, Br., Germany

Professor W. Wunderlich, Technische Hochschule,
Karlsplatz 13, Wien IV, Austria

LECTURE NOTES FROM THE THIRD SUMMER INSTITUTE. The third Summer Institute sponsored by the American Mathematical Society with financial support from the National Science Foundation was devoted to set theoretic topology. It was held on the campus of the University of Wisconsin from July 24 through August 20. A summary of the lectures and seminars of the Institute has been prepared. While the supply lasts, members of the Society may obtain copies of the summary free from R. H. Bing, 301 B North Hall, University of Wisconsin, Madison 6, Wisconsin. Professor Bing has stated that emphasis was placed on timeliness in the preparation of the summary and that therefore editing of the report

(*Recently invited to join the Commission; answer awaited.)

was kept to a minimum. (This item is also listed in the catalogue of lecture notes which appears in this issue of the *Notices*.)

A NEW MEMOIR. Memoir No. 18 of the American Mathematical Society, *The lattice theoretic background of the dimension theory of operation algebras*, by L. H. Loomis is now available. The price is $1.30.

It is the purpose of this memoir to present the von Neumann-Murray dimension theory in an abstract setting that is as simple and natural as possible. The basic structure is a complete orthocomplemented lattice which bears a completely additive congruence relation satisfying certain natural axioms suggested by the operator algebra prototype. The theory developed here for such a dimension lattice includes most of the standard theorems of the type I, II, III classification theory. Its most detailed application is the dimension theory of a new class of AW^*-algebras.

COMMUNICATIONS ON PURE AND APPLIED MATHEMATICS. The current issue is dedicated to Professor Hermann Weyl on the occasion of his seventieth birthday.

A LIST OF CHAIRMEN OF DEPARTMENTS OF MATHEMATICS has been compiled and is now available upon request at the Headquarters Office of the Society at 80 Waterman Street, Providence, Rhode Island. Requests may also be sent to the Office of the Secretary of the Society, Professor E. G. Begle, Secretary, American Mathematical Society, Leet Oliver Memorial Hall, Yale University, New Haven 11, Connecticut.

CATALOGUE OF LECTURE NOTES ON MATHEMATICS TOPICS

Note: From time to time universities and colleges sell sets of mimeographed lecture notes on mathematical topics. It has been suggested that it would be useful to publish a little catalogue of such items once or twice a year in the *Notices*. Accordingly, as an experiment, the following catalogue has been compiled.

The method of compilation consisted essentially in scanning through a list of mathematics department chairmen, selecting the institutions at which research and teaching in advanced mathematics was known (or thought) to be in progress, and sending each chairman a letter inviting him to list his wares, if any. Doubtless this method missed a number of valuable items. Departments with items that might have been included in this edition of the catalogue are urged to send the information in to the Headquarters Offices. Such items will be included in a later supplement.

BROWN UNIVERSITY

The following items may be ordered from: Brown University Press, Brown University, Providence, Rhode Island

STEFAN BERGMAN, *Hodograph method supplement to fluid dynamics by R. von Mises and K. O. Friedrichs*, 1941, 45 pp., mimeographed, unbound $1.50

STEFAN BERGMAN, *Partial differential equations, with advanced topics*, 1941, 242 pp., mimeographed, unbound 4.00

LEON BRILLOUIN, *Mathematics of ultrahigh frequencies in radio*, 1943, 216 pp., mimeographed, unbound 4.00

SERGEI CHAPLYGIN, *On gas jets*, 1944, 121 pp., mimeographed, unbound 3.00

PHILLIPP FRANK, *Thermodynamics, with supplementary notes by J. A. Goff*, 1945, 152 pp., mimeographed, unbound 3.00

WILLIAM PRAGER, *Theory of plasticity*, 1941, 168 pp., mimeographed, unbound 2.50

WILLIAM PRAGER, *Theory of structures*, 1945, 138 pp., mimeographed, unbound 3.00

HANS REISSNER, *Graphical statics*, 1942, 66 pp., mimeographed, unbound 1.50

HANS REISSNER, *Hydrodynamical theory of propellers*, 1942, 52 pp., mimeographed, unbound 1.50

RICHARD von MISES, *Theory of flight*, 1942, 138 pp. mimeographed

Unbound $2.50
Bound 4.00

UNIVERSITY OF CALIFORNIA, BERKELEY

The following items may be ordered from: Associated Students Store, University of California, Berkeley 4, California

A. SEIDENBERG, *Syllabus on projective geometry*, mimeographed

G. C. EVANS, *Metric spaces and function theory*, Part I; Revised chapter II; Part II, 1; II, 2, mimeographed

E. PINNEY, *Differential equations*, mimeographed

C. B. MORREY, JR., Notes on "*limits*", for use in calculus courses, mimeographed

The following items may be ordered from: Department of Mathematics, University of California, Berkeley 4, California

M. H. PROTTER, *On some problems in transonic flow.* Technical report No. 1, on Air Force Project AF–18 (600)–1117

J. G. van der CORPUT, *Asymptotic expansions I, fundamental theorems of asymptotics.* Technical report No. 1, on Air Force Project AF–18 (600)–958

J. G. van der CORPUT, *Asymptotic expansions II, elementary methods.* Technical report No. 2, on Air Force Project AF–18 (600)–958

J. G. van der CORPUT, *Asymptotic expansions III, the asymptotic behaviour of the real solutions of certain second order differential equations.* Technical report No. 3, on Air Force Project AF–18 (600)–958

D. C. KLEINECKE, *Degenerate perturbations.* Technical report No. 1, on Army Ordnance Project DA–04–200–ORD–171, Task Order 5

D. C. KLEINECKE, *On a theorem of Gokhberg.* Technical report No. 2, on Army Ordnance Project DA–04–200–ORD–171, Task Order 5

D. C. KLEINECKE, *A generalization of complete continuity.* Technical report No. 3, on Army Ordnance Project DA–04–200–ORD–171, Task Order 5

D. C. KLEINECKE, *Finite perturbations and the essential spectrum.* Technical report No. 4, on Army Ordnance Project, DA–04–200–ORD–171, Task Order 5

H. P. KRAMER, *Perturbation of differential operators.* Technical report No. 5, on Army Ordnance Project DA–04–200–ORD–171, Task Order 5

V. A. KRAMER, *Investigations in asymptotic perturbation series.* Technical report No. 6, on Army Ordnance Project DA–04–200–ORD–171, Task Order No. 5

T. KATO, *Quadratic forms in Hilbert spaces and asymptotic perturbation series.* Technical report No. 7, on Army Ordnance Project DA–04–200–ORD–171, Task Order No. 5

J. B. BUTLER, *Perturbation series for eigenvalues of regular non-symmetric operators.* Technical report No. 8, on Army Ordnance Project DA–04–200–ORD–171, Task Order No. 5

C. C. CHANG, A. C. DAVIS, ALFRED TARSKI, *Research in the foundations of mathematics.* Final report, on Army Ordnance Project DA–04–200–ORD–171, Task Order No. 4

H. FLANDERS, *Commutative linear differential operators.* Technical report No. 1, on ONR Project Nonr–222 (37)

R. MacCAMY, *Linear boundary problems arising in the diffraction of water waves by surface obstacles,* Part I. Technical report No. 1, on ONR Project Nonr–222 (25)

E. PINNEY, *The initial surface displacement and velocity on the surface of a semi-infinite elastic solid due to an impulsive pressure-wave source.* Technical report No. 1, on ONR Project Nonr–222 (04)

E. PINNEY, *Plastic soil mechanics theories.* Technical report No. 2, on ONR Project Nonr–222 (04)

P. L. CHAMBRE, *The speed of a plane compression wave in a soil.* Technical report No. 3, on ONR Project Nonr–222 (04)

P. L. CHAMBRE, RALPH LAKNESS, CHARLES B. MORREY, JR., E. PINNEY, M. H. PROTTER, *Wave propagation in solids.* Technical report No. 4, on ONR Project Nonr–222 (04)

M. H. PROTTER, *The periodicity problem for pseudo-analytic functions.* Technical report No. 2, on Air Force Project AF–18 (600)–1117

TOSIO KATO, *Notes on perturbation theory.* Technical report No. 9, on Army Ordnance Project DA–04–200–ORD–171, Task Order 5

RICHARD H. DAVIS, *Singular normal differential operators.* Technical report No. 10, on Army Ordnance Project DA–04–200–ORD–171, Task Order 5

MARVIN ROSENBLOOM, *On the operator equation* $BX - XA = Q$. Technical report No. 11, on Army Ordnance Project DA–04–200–ORD–171, Task Order 5

INSTITUTE FOR ADVANCED STUDY

The following items may be ordered from: Building C, The Institute for Advanced Study, Princeton, New Jersey

P. T. BATEMAN et al., *Seminar on convex sets*, 88 pp.	$2.62
S. S. CHERN, *Topics in differential geometry*, 106 pp.	3.12
JEAN LERAY, *Hyperbolic differential equations*, 238 pp.	3.16
MARSTON MORSE, *Introduction to Analysis in the large*, 191 pp.	3.76
CARL L. SIEGEL, *Analytic functions of several complex variables*, 200 pp.	3.66
CARL L. SIEGEL, *Lectures on the analytical theory of quadratic forms*, 239 pp.	3.66
OSWALD VEBLEN and JOHN von NEUMANN, *Geometry of complex domains*, 259 pp.	4.20
GEORGES deRHAM and KUNIHIKO KODAIRA, *Harmonic integrals*, 117 pp.	2.62

UNIVERSITY OF KANSAS

The following items may be ordered from: Professor G. B. Price, 215 Frank Strong Hall, University of Kansas, Lawrence, Kansas

N. ARONSZAJN and P. PANITCHPAKDI, *Extension of uniformly continuous transformations and hyperconvex metric spaces*, 65 pp. Research Grant NSF–G 1126, Report No. 1	Free
DELMAR L. BOYER, *Enumeration theorems in infinite abelian groups*, 31 pp. Research Grant NSF–G 1126, Report No. 2	Free
E. K. McLACHLAN, *Extremal elements of certain convex cones of functions*, 45 pp. Research Grant NSF–G 1126, Report No. 3	Free
ALEXANDRE GROTHENDIECK, *A general theory of fibre spaces with structure sheaf*, 100 pp. Research Grant NSF–G 1126, Report No. 4	Free
GUSTAVE CHOQUET, *Theory of capacities*, 179 pp. Contract No. AF 18 (600)–959 Project No. R–354–10–49, Technical Note No. 1	Free
MARCEL BRELOT, *Contributions to potential theory*, 149 pp. Contract No. AF 18 (600)–959 Project No. R–354–10–49,	

Technical Note No. 2 — Free

The following items may be ordered from: Dr. N. Aronszajn, Department of Mathematics, University of Kansas, Lawrence, Kansas

N. ARONSZAJN and K. T. SMITH, *Functional spaces and functional completion*, 68 pp. Technical report 10, Contract N58304 with Office of Naval Research — Free

N. ARONSZAJN and W. F. DONOGHUE, *Variational approximation methods applied to eigenvalues of a clamped rectangular plate*, 76 pp. Report 12, Contract N58304 with Office of Naval Research — Free

GARDING, LAX, SMITH, ARONSZAJN, HUBER, KRANZER, PAYNE, WEINBERGER, TITT, *Conference on partial differential equations. Summer 1954*, 148 pp. Report 14, Contract N58304 with Office of Naval Research — Free

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

The following items may be ordered from: Technology Store, Massachusetts Institute of Technology, 40 Massachusetts Avenue, Cambridge 39, Massachusetts

GEORGE W. WHITEHEAD, *Homotopy theory*. Based on a course in advanced topology given Fall, 1953, 168 pp. multilithed — $3.50

H. CARTAN, *Seminaires 1953–54 and Seminaire Bourbaki*, 44 pp., in French, multilithed — 1.25

H. CARTAN, *Seminaires 1951–52*, 194 pp., in French, multilithed — 3.75

H. CARTAN, *Seminaires 1950–51*, 98 pp., in French, plus additional *material on spectral sequences*, 12 pp., in English, 110 pp. complete, mimeographed — 1.50

Paris, Ecole Normale Superieure

UNIVERSITY OF MICHIGAN

The following items may be ordered from: Department of Mathematics, University of Michigan, Ann Arbor, Michigan. * Plus postage

COPELAND, *Probability*, 45 pp. — 0.45 *

ECKMAN, *Differentiable manifolds*, 95 pp. — 0.95 *

KUIPER, *Algebraic geometry*, 107 pp. — 1.00 *

Lecture notes of conference on functions of a complex variable, 179 pp. — 2.00

NEW YORK UNIVERSITY
INSTITUTE OF MATHEMATICAL SCIENCES

The following items may be ordered from: Institute of Mathematical Sciences, 25 Waverly Place, New York 3, New York. Postage charged for three or more titles

E. ARTIN, *Modern higher algebra*, 198 pp., bound	$3.25
E. ARTIN, *Selected topics in geometry*, 150 pp., unbound	2.50
L. BERS, *Introduction to topology*, 280 pp., bound	4.25
L. BERS, *Theory of pseudo-analytic functions*, 187 pp., bound	3.00
R. COURANT, *Introduction to mathematical analysis*, 186 pp., bound	2.75
R. COURANT, *Theory of functions of a complex variable*, 226 pp., bound	3.50
A. ERDELYI, *Operational calculus*, 210 pp., bound	1.50
B. FRIEDMAN, *Advanced theory of probability*, 136 pp., bound	2.25
B. FRIEDMAN, *Theory of functions of a real variable*, 193 pp., unbound	3.00
K. O. FRIEDRICHS, *A chapter in the theory of linear operators in Hilbert space*, 49 pp., unbound	0.75
K. O. FRIEDRICHS, *Advanced ordinary differential equations*, 281 pp., bound	3.25
K. O. FRIEDRICHS, *Energy principle*, 15 pp., unbound	0.15
K. O. FRIEDRICHS, *Functional analysis and applications*, 204 pp., bound	3.00
K. O. FRIEDRICHS, *Methods of mathematical physics*, 225 pp., bound	3.25
K. O. FRIEDRICHS, *Special topics in analysis*, 268 pp., unbound	4.00
K. O. FRIEDRICHS, *Theory of wave propagation*, 170 pp., unbound	2.75
F. JOHN, *Partial differential equations*, 211 pp., bound	3.50
F. JOHN, *Special topics in partial differential equations*, 165 pp., bound	2.50
F. JOHN, *Differential equations with approximate and improper data*, 86 pp., unbound	1.50
P. LAX, *Partial differential equations*, 276 pp., bound	3.56
WILLIAM MAGNUS, *Discrete groups*, 116 pp., bound	2.25

L. NIRENBERG, Seminar: *Differential geometry in the large*, 81 pp., bound $1.50

A. PETERS, *Linear algebra*, 154 pp., bound 2.50

V. RAYUDU, *Applications of group theory to physical problems*, 208 pp., bound 3.50

F. RELLICH, *Perturbation theory of eigenvalue problems*, 164 pp., bound 2.75

F. RELICH, *Spectral theory of a second-order ordinary differential operator*, 159 pp., bound 2.50

Seminar in mathematical physics, 325 pp., unbound 4.00

Seminar: *Recent developments in the theory of wave propagation*, 219 pp., bound 2.50

H. N. SHAPIRO, *The theory of numbers*, 232 pp., bound 3.50

J. J. STOKER, *Differential geometry*, 154 pp., bound 2.50

J. J. STOKER, *Introduction to the geometry of point sets*, 114 pp., unbound 2.00

Studies in nonlinear vibration theory, 193 pp., bound 3.00

UNIVERSITY OF NORTH CAROLINA

The following items may be ordered from: Department of Mathematics, University of North Carolina, Chapel Hill, North Carolina. Limited supply only of all notes available

E. T. BROWNE, *Introduction to the theory of determinants and matrices*, Part I, 175 pp., mimeographed, 3–hole punched 2.25

E. T. BROWNE, *Introduction to the theory of determinants and matrices*, Part II, 135 pp., mimeographed, 3–hole punched 2.25

NATIONAL SCIENCE FOUNDATION
SUMMER CONFERENCE IN COLLEGIATE MATHEMATICS 1954

E. ARTIN (Notes by J. H. Wahab), *Selected topics in modern algebra*, 103 pp., mimeographed 2.25

TIBOR RADO (Notes by A. D. Ziebur), *The mathematical theory of rigid surfaces: An application of modern analysis*, 82 pp. *Cohomology groups*, 14 pp., 96 pp. complete, mimeographed 2.25

F. L. GRIFFIN, Leader, *Seminar on curricula and related problems*, 60 pp.

A. W. TUCKER, *Undergraduate courses in geometric concepts and topology*, 26 pp.

R. M. THRALL, *Mathematics needed in the social sciences*, 32 pp. 118 pp. complete, mimeographed 2.25

OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE

The following items may be ordered from: College Bookstore, Oklahoma Agricultural and Mechanical College, Stillwater, Oklahoma. Lecture Notes for Summer Institute for Teachers of Collegiate Mathematics sponsored by National Science Foundation, June 13 – July 23, 1955

No. ARTHUR ROSENTHAL, *Introduction to measure theory and integration*, 125 pp., paper bound $2.66

No. H. S. M. COXETER, *Contributions of geometry to the main stream of mathematics*, 167 pp., paper bound 2.66

No. A. W. TUCKER, *Game theory and programming*, 88 pp., paper bound 2.16

No. SAUNDERS MacLANE, E. G. BEGLE, G. BAILEY PRICE, *Lectures on experimental programs in collegiate mathematics*, 79 pp., paper bound 1.16

UNIVERSITY OF OREGON

The following items may be ordered from: Department of Mathematics, University of Oregon, Eugene, Oregon. Course of lectures given at the Summer Conference in Collegiate Mathematics sponsored by the National Science Foundation at the University of Oregon, 1954

No. JOHN W. TUKEY, *Analysis of variance*, 86 pp. 1.00

No. HANS RADEMACHER, *Elementary mathematics from an advanced viewpoint*, 60 pp. 1.00

No. HANS RADEMACHER, *Analytic additive number theory*, 146 pp. 1.50

No. D. G. BOURGIN, *Principles of convexity and topology*, 114 pp. 1.50

UNIVERSITY OF TENNESSEE

The following item may be ordered from: Department of Mathematics, University of Tennessee, Knoxville, Tennessee

No. JEAN LERAY and JULES SCHAUDER, *Topologie et equations fonctionnelles*, 37 pp. Free

UNIVERSITY OF WISCONSIN

The following item may be ordered from: Professor R. H. Bing, 301B North Hall, University of Wisconsin, Madison 6, Wisconsin FREE TO MEMBERS OF THE SOCIETY. Limited supply only

No. SUMMER INSTITUTE ON SET THEORETIC TOPOLOGY, MADISON, WISCONSIN, JULY 24–AUGUST 20, 1955. Sponsored by the American

Mathematical Society with financial support from the National Science Foundation. *Summary of Lectures and Seminars*, 148 pp., paperbound

Authors: R. D. ANDERSON, R. F. ARENS, R. H. BING, TOM BRAHANA, MORTON BROWN, C. E. BURGESS, M. L. CURTIS, ELDON DYER, E. E. FLOYD, M. K. FORT, JR., LEONARD GILLMAN, ALAN GOLDMAN, MARY-ELIZABETH HAMSTROM, O. H. HAMILTON, O. G. HARROLD, JR., MELVIN HENRIKSEN, EDWIN HEWITT, ERIK HEMMINGSEN, J. R. ISBELL, F. B. JONES, VIC KLEE, LOUIS McAULEY, E. A. MICHAEL, E. E. MOISE, DEANE MONTGOMERY, SUMNER MYERS, J. H. ROBERTS, MARY ELLEN RUDIN, J. H. SLYE, P. A. WHITE, G. T. WHYBURN, R. L. WILDER, R. F. WILLIAMS

*Addendum

HARVARD UNIVERSITY

The following item may be ordered from: Harvard University, Mathematics Department, 2 Divinity Avenue, Cambridge 38, Massachusetts

LARS AHLFORS, *Variational methods in function theory*, 218 pp., $2.00

*Information received too late to be inserted in body of Catalogue.

PERSONAL ITEMS

Mr. J. L. Folks of Iowa State College of Agriculture and Mechanic Arts is the recipient of the Iowa State Alumni Achievement Fund Fellowship.

Professor M. Gweneth Humphreys of Randolph-Macon Woman's College has been awarded a Ford Faculty Fellowship and will spend the year in Canada.

Professor I. I. Hirschman, Jr. of Washington University is spending the year in France as a Fulbright Research Scholar.

National Science Foundation Postdoctoral Fellowships have been awarded to the following: Dr. Maurice Auslander, Columbia University; Dr. J. R. Isbell, Princeton University; Dr. J. E. Nelson, University of Chicago.

The National Science Foundation has announced grants in mathematics to the following institutions, to support studies by the professors indicated: Brown University, Rohn Truell; The University of California, Berkeley, J. G. van der Corput; The University of California, Los Angeles, E. G. Straus; The University of Chicago, A. F. Bausch; Columbia University, Samuel Eilenberg; Columbia University, E. R. Lorch; Indiana University, G. W. Whaples; The Institute for Advanced Study, Hassler Whitney and Arne Beurling; The University of Kansas, G. B. Price; The Kentucky Research Foundation, V. F. Cowling; Kenyon College, O. M. Nikodym; New York University, Institute of Mathematical Sciences, Lipman Bers; University of Notre Dame, Ky Fan, J. A. Jenkins, and Wladimir Seidel; Purdue Research Foundation, J. H. B. Kemperman; Queens College, Leo Zippin; The University of Rochester, Mary E. Rudin; Tulane University, A. D. Wallace; Virginia Polytechnic Institute, M. C. K. Tweedie; Wayne University, George Lorentz.

Associate Professor Daniel Zelinsky of Northwestern University has been awarded a Fulbright Fellowship and is on leave of absence in Kyoto, Japan.

Assistant Professor N. C. Ankeny of The Johns Hopkins University has been appointed to an assistant professorship at The Massachusetts Institute of Technology.

Dr. J. S. Bendat of Northrop Aircraft Company has accepted a position as a member of the technical staff with the Ramo-Wooldridge Corporation, Los Angeles, California.

Mr. George Blustein of Raytheon Manufacturing Company has accepted a position as programmer with the Datamatic Corporation, Newton Highlands, Massachusetts.

Miss Thelma E. Bradford of Lane College has been appointed to an

assistant professorship at the Fort Valley State College.

Assistant Professor R. H. Brown of Boston University has accepted a position as staff member with the Operations Evaluation Group, Washington, District of Columbia.

Assistant Professor W. P. Brown of Michigan State University has been appointed to an assistant professorship at the University of Toronto.

Dr. J. C. Burkill of Cambridge University is on leave and will be spending the year in the United States. He will be at the Institute for Advanced Study for the first semester and at The Rice Institute for the second semester.

Mr. B. R. Cato, Jr. of the University of Maryland has been appointed to an assistant professorship at the College of William and Mary.

Professor Y. W. Chen of Wayne University is on leave of absence at the University of California, Berkeley.

Mr. B. F. Cheydleur has accepted a position as chief, Electronic Computer Applications, Engineering Research Associates Division, Remington Rand Division of Sperry Rand Corporation, St. Paul, Minnesota.

Professor Emeritus E. W. Chittenden of the State University of Iowa has accepted a position as mathematician with the Diamond Ordnance Fuze Laboratories, Washington, District of Columbia

Dr. A. E. Danese of the University of Tennessee has accepted a position as mathematician with Eastman Kodak Company.

Mr. L. J. Derr of Tulane University has accepted a position as data processing analyst with Shell Oil Company, New Orleans, Louisiana.

Dr. J. J. Eachus of the Navy Department has accepted a position as systems director with the Datamatic Corporation, Newton, Massachusetts.

Dr. D. E. Edmondson of Tulane University has been appointed to an assistant professorship at Southern Methodist University.

Dr. P. C. Gilmore of the University of Toronto has been appointed to an assistant professorship at The Pennsylvania State University.

Dr. W. L. Gordon of Duke University has accepted a position as mathematician with the Department of Defense, Washington, District of Columbia.

Mr. L. L. Helms of Purdue University has accepted a position as senior research engineer with Convair, Pomona, California.

Professor G. P. Hochschild of the University of Illinois has been appointed to a visiting professorship at the University of California, Berkeley.

Dr. L. I. Holder of Purdue University has been appointed to an assistant professorship at San Jose State College.

Dr. M. A. Hyman of the Westinghouse Electric Corporation has accepted a position as research analyst with The Eckert-Mauchly Division

of The Sperry Rand Corporation, Philadelphia, Pennsylvania.

Associate Professor L. H. Kanter of Mississippi State College has been appointed to an assistant professorship at the Clarkson College of Technology.

Dr. R. F. King of the University of Illinois has accepted a position as assistant mathematician with the Argonne National Laboratory, Lemont, Illinois.

Professor M. S. Knebelman of the State College of Washington has been appointed to the position of Acting Associate Dean of the College of Sciences and Arts.

Professor Jacob Korevaar of the Institute of Technology, Delft, Netherlands has been appointed to an associate professorship at the University of Wisconsin.

Mr. Eric Korngold of North American Aviation Company has accepted a position as a staff member with the Operations Research Group, Arthur D. Little Company, Incorporated, Cambridge, Massachusetts.

Mr. H. W. Lilliefors of the University of Maryland has accepted a position as research engineer with Missile Systems Division, Lockheed Aircraft Corporation, Van Nuys, California.

Dr. C. T. Long of the University of Oregon has accepted a position as analyst with the National Security Agency, Arlington, Virginia.

Dr. Mark Lotkin of the Radio Corporation of America Service Company, Incorporated has accepted a position as mathematician with the Republic Aviation Corporation, Farmingdale, New York.

Mr. G. E. Mahoney of Boston University has accepted a position as mathematician with the Computer Control Company, Incorporated, Point Mugu, California.

Dr. J. P. Mayberry of the Forrestal Research Center has accepted a position as professional engineer with the Radio Corporation of America, Moorestown, New Jersey.

Assistant Professor K. M. McMillin of the College of Saint Thomas has been appointed to an assistant professorship at Michigan College of Mining and Technology.

Dr. R. V. Mendenhall of Vitro Laboratories, Incorporated has been appointed to an assistant professorship at the University of Miami.

Dr. C. H. Meng of the University of Southern California has been appointed to an assistant professorship at Sacramento State College.

Dr. T. O. Moore of the University of Missouri has been appointed to an assistant professorship at the University of Florida.

Professor F. R. Morris of Fresno State College has been appointed to an emeritus professorship.

Professor A. P. Morse of the University of California, Berkeley is

on leave.

Dr. William Nachbar of Boeing Airplane Company has accepted a position as research scientist with Lockheed Aircraft Corporation, Van Nuys, California.

Dr. W. A. Newcomb of the Forrestal Research Center has been appointed theoretical physicist at the University of California Radiation Laboratory.

Professor Ivan Niven of the University of Oregon is spending the year as a visiting scholar at the University of California, Berkeley.

Dr. Katsumi Nomizu of the National Center of Scientific Research has been appointed to an assistant professorship at Nagoya University.

Dr. Emanuel Parzen of the Hudson Laboratories has been appointed to an assistant professorship in mathematical statistics at Columbia University.

Dr. Alexander Peyerimhoff of the University of Giessen has been appointed to a visiting associate professorship at the University of Cincinnati.

Dr. Anatol Rapoport of the Center for Advanced Study in the Behavioral Sciences, Stanford, California has been appointed to an associate professorship in mathematical biology at the Mental Health Research Institute, University of Michigan.

Mr. A. E. Roberts, Jr. of Engineering Research Associates has accepted a position as vice president and director of applied mathematics with General Kinetics, Incorporated, Arlington, Virginia.

Dr. W. C. Sangren of Oak Ridge National Laboratory has accepted a position as Chief of the Computing and Mathematics Division, Curtiss-Wright Research, Clifton, New Jersey.

Mr. Leonard Schieber of International Business Machines Corporation has accepted a position as project engineer with the Kearfott Company, Clifton, New Jersey.

Assistant Professor J. T. Schwartz of Yale University has been appointed to a visiting professorship at New York University.

Assistant Professor George Seifert of the University of Nebraska has been appointed to an assistant professorship at Iowa State College of Agriculture and Mechanic Arts.

Dr. Jerome Spanier of the University of Chicago has accepted a position as senior mathematician with the Westinghouse Electric Corporation, Pittsburgh, Pennsylvania.

Assistant Professor George Springer of Northwestern University has been appointed to an associate professorship at the University of Kansas.

Dr. R. G. Stoneham of Logistics Research, Incorporated has been appointed to an assistant professorship at the University of California,

Santa Barbara College.

Mr. Irwin Stoner of the Bell Aircraft Corporation has accepted a position as associate mathematician with the Cornell Aeronautical Laboratory, Incorporated, Buffalo, New York.

Dr. A. C. Sugar of the University of California has accepted a position as senior research engineer with North American Aviation, Incorporated, Los Angeles, California.

Mr. O. E. Taulbee of Michigan State University has accepted a position as mathematician with Engineering Research Associates Division, Remington Rand Division of Sperry Rand Corporation, St. Paul, Minnesota.

Mr. L. G. Vargo of General Dynamics Corporation has accepted a position as structures engineer with Ryan Aeronautical Company, San Diego, California.

Assistant Professor S. I. Vrooman of Rensselaer Polytechnic Institute has been appointed to a visiting professorship at the University of Pittsburgh.

Professor Frantisek Wolf of the University of California, Berkeley is on leave and will be spending the year in London and Rome.

The following promotions are announced:

Jerome Blackman, Syracuse University, to an assistant professorship.

R. G. Blake, University of Florida, to an associate professorship.

K. L. Chung, Syracuse University, to a professorship.

Harold Davis, University of California, to an assistant professorship.

S. P. Diliberto, University of California, Berkeley, to an associate professorship.

H. S. Heaps, Nova Scotia Technical College, to an associate professorship.

Erik Hemmingsen, Syracuse University, to an associate professorship.

C. C. Hsiung, Lehigh University, to an associate professorship.

A. O. Huber, University of Maryland, to an assistant research professorship.

A. W. Landers, Brooklyn College, to an associate professorship.

J. W. Milnor, Princeton University, to an assistant professorship.

Leo Moser, University of Alberta, to an associate professorship.

P. E. Pfeiffer, The Rice Institute, to an associate professorship in electrical engineering.

Louis Sacks, University of Pittsburgh, to an associate professorship.

Peter Scherk, University of Saskatchewan, to a professorship.

M. T. Wechsler, State College of Washington, to an assistant professorship.

The following appointments to instructorships are announced:

University of California, Berkeley: Dr. R. A. Macauley, Dr. D. E. Schroer; Carnegie Institute of Technology: Mr. Gus DiAntonio; University of Cincinnati: Mr. Smbat Abian; Duke University: Dr. J. T. Mohat, Dr. R. T. Prosser; Harvard University: Dr. L. A. Schmittroth; Illinois Institute of Technology: Mr. Frank Kozin, Mr. C. A. Nicol; Iowa State College of Agriculture and Mechanic Arts: Dr. D. A. Storvick; Marshall College: Mr. L. O. Thompson; University of Maryland: Mr. Henry Beiman; University of Michigan: Dr. J. R. Munkres; Northwestern University: Mr. R. B. Kellogg; Radio Engineering Institute: Mr. H. W. Becker; Rensselaer Polytechnic Institute: Mr. A. E. Nussbaum; University of Rochester: Mr. J. P. Line; Rutgers University: Mr. A. E. Babbitt, Jr.; San Diego State College: Mr. P. W. Shaw; San Jose State College: Mr. R. C. Wrede; Southern Illinois University: Mr. W. G. Johnson; Stanford University: Dr. T. T. Frankel; Syracuse University: Mr. D. M. Friedlen, Mrs. Marjorie Halpern; Wesleyan University: Dr. C. S. Coleman; University of Wisconsin: Dr. Karel DeLeeuw.

Deaths:

Professor Emeritus R. F. Deimel of Stevens Institute of Technology died on September 28, 1955 at the age of seventy-four years. He had been a member of the Society for fifty-two years.

Professor Emeritus R. W. Marriott of Swarthmore College died on October 19, 1955 at the age of seventy-two years. He had been a member of the Society for thirty-three years.

Professor S. B. Myers of the University of Michigan died on October 8, 1955 at the age of forty-five years. He had been a member of the Society for twenty-four years.

Dr. J. M. Shaheen of the University of Cincinnati died on July 14, 1955 at the age of twenty-eight years.

NEW PUBLICATIONS

Abhandlungen aus der Sowjetischen Physik. Vol. IV. Berlin, Verlag Kultur und Fortschritt, 1954. 287 pp.

Alexandrow, A. D. *Die innere Geometrie der konvexen Flächen.* Berlin, Akademie-Verlag, 1955. 17+522 pp. 38.50 DM.

Borel, E., and Chéron, A. *Theorie mathématique du bridge à la portée de tous.* 2d ed. Paris, Gauthier-Villars, 1955. 18+424 pp. 2200 fr.

Borsuk, K., and Szmielew, W. *Podstawy geometrii.* [The foundations of geometry.] Warsaw, Państwowe Wydawnictwo Naukowe, 1955. 363 pp. 25.00 zł.

Chéron, A. See Borel, E.

Chevalley, C. *The construction and study of certain important algebras.* Tokyo, The Mathematical Society of Japan, 1955. 16+64 pp. $1.50.

Cinquant' anni di relatività, 1905–1955. Ed. by M. Pantaleo. Florence, Editrice Universitaria, 1955. 50+634 pp.

Dinnik, A. N. *Prodol'nyĭ izgib. Kručenie.* Moscow, Izdat. Akad. Nauk SSSR, 1955. 392 pp. 18.80 rubles.

D'Ocagne, M. *Histoire abrégée des sciences mathématiques.* Ed. by R. Dugas. Paris, Vuibert, 1955. 405 pp. 1350 fr.

Dugas, R. See D'Ocagne, M.

Dumas, M. *Les épreuves sur échantillon. A. Application des théories mathématiques.* III. Paris, Centre National de la Recherche Scientifique Service des Publications. 1955. 170 pp. 1000 fr.

Duschek, A., and Hochrainer, A. *Grundzüge der Tensorrechnung in analytischer Darstellung.* Part III. *Anwendungen in Physik und Technik.* Vienna, Springer, 1955. 6+250 pp. 24.00 DM; $5.70.

Feys, R. See Gentzen, G.

Fraenkel, A. A. *Integers and theory of numbers.* New York, Scripta Mathematica, 1955. 7+102 pp.

Fung, Y. C. *An introduction to the theory of aeroelasticity.* New York, Wiley, 1955. 11+490 pp. $10.50.

Gentzen, G. *Recherches sur la déduction logique.* Ed. by R. Feys and J. Ladrière. Paris, Presses Universitaires de France, 1955. 11+170 pp. 1000 fr.

Gréa, R. See Higonnet, R.

Higonnet, R., and Gréa, R. *Etude logique des systèmes binaires.* Paris, Berger-Levrault, 1955. 8+452 pp.

Hochrainer, A. See Duschek, A.

Körner, S. *Conceptual thinking, a logical inquiry.* New York, Cambridge University Press, 1955. 8+301 pp. $5.50.

Kuratowski, K. *Wstęp do teorii mnogości i topologii.* [Introduction of

the theory of sets and topology.] Warsaw, Państwowe Wydawnictwo Naukowe, 1955. 218 pp. 14.20 zł.

Ladrière, J. See Gentzen, G.

Ljusternik, L. A., and Sobolew, W. I. *Elemente der Funktionalanalysis.* Berlin, Akademie-Verlag, 1955. 11+256 pp. 25.00 DM.

Lorenzen, P. *Einführung in die operative Logik und Mathematik.* Berlin, Springer, 1955. 6+298 pp. 38.40 DM.

Newski, B. A. *Praktikum der Nomogrammkonstruktionen.* Berlin, Akademie-Verlag, 1955. 15+316 pp. 35.00 DM.

Panofsky, W. K. H., and Phillips, M. *Classical electricity and magnetism.* Cambridge, Addison-Wesley, 1955. 11+400 pp. $8.50.

Pantaleo, M. See *Cinquant' anni di relatività, 1905–1955.*

Phillips, M. See Panofsky, W. K. H.

Popova, H. See Vinogradov, I. M.

Prior, A. N. *Formal logic.* Oxford, Clarendon, 1955. 9+329 pp. $5.60.

Reid, C. *From zero to infinity, what makes numbers interesting.* New York, Crowell, 1955. 10+145 pp. $3.00.

Saxer, W. *Versicherungsmathematik.* Part I. Berlin, Springer, 1955. 9+249 pp. Paperbound, 36.00 DM; clothbound, 39.60 DM.

Sobolew, W. I. See Ljusternik, L. A.

Szmielew, W. See Borsuk, K.

Vinogradov, I. M. *An introduction to the theory of numbers.* Trans. by H. Popova. London, Pergamon, 1955. 6+155 pp. $1.75.

HOUSTON MEETING

December 27–29, 1955

RESERVATION FORM

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